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AUTHOR Crandall, David P.
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ABSTRACT

Visits to 146 schools in the winter of 1978-79 and interviews with teachers, administrators, and others involved with the implementation of 61 different instructional innovations revealed stability and durability in these innovations and fidelity to the original innovation. The innovations are those associated with federally funded projects attempting to improve educational practice. The best known are those of the National Diffusion Network. An explanation of innovation adoptions is that responses to the federal projects led to the forming of a community of local practitioners who suddenly had new channels of communication open to them. To share this information, professional conferences were held with participants, who shared the following characteristics: (1) other teachers served as their role models, (2) their attendance at the conferences was approved by their principals, and (3) they have figured out how to survive in a very grueling job. For schools, innovation is largely a process of imitation or emulation under conditions of noncompetition. Given the opportunity to try out new practices perceived as attractive and constituting an improvement, teachers change. (MLF)

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EMULATION AND REPLICATION AS A SCENARIO FOR SUCCESSFUL SCHOOL IMPROVEMENT

David P. Crandall

The NETWORK, Inc.
290 South Main Street
Andover, Massachusetts 01810

EA 017 257

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In The NETWORK's Study of Dissemination Efforts Supporting School Improvement (Crandall and Associates, 1982), we visited close to 150 schools in states across the country and interviewed principals and teachers involved in improvement efforts begun as far back as 1974. Much to our surprise, we found a tremendous amount of stability and durability in these innovations, a substantial amount of change in terms of alteration of practice, and exceptional fidelity to the original innovation. These findings, coupled with our own and others' extensive experience over the last several years, suggest that we should be quite pleased with our progress and optimistic about the prospects for the future. This optimistic view, however. is by no means shared or yet part of the mainstream dialogue on the subject.

Much has been written about the sorry state of our nation's schools (Goodlad, 1979), the questionable competence and literacy of teachers (Time, 1980), not to mention the kids, and the need for major restructuring of the educational enterprise (Goodlad, 1979). Federal efforts to stimulate innovation and improvement are reported variously as having been blunted by practitioners' departure from intended purposes (Berman and McLaughlin, 1978), withdrawal of federal funds (Hearn, 1970, 1972), the absence of interpersonal assistance to supplement materials (Emrick and Peterson, 1978), the loss of status in the eyes of peers (Giacquinta, 1975), or the ubiquitous phenomenon of "loose coupling" (Weick, 1976).

While few serious observers of how schools use new knowledge, implement new practices, and innovate in general would go so far as to suggest, "the thing ain't broke, so don't fix it," some serious rethinking about the causes and the reality seems warranted.

Compared to other public sector enterprises, the track record of elementary and secondary education -- in terms of innovativeness and the rigor associated with continuation-discontinuation decisions -- is not so bad (again, in general).

Reviewing the history of major innovations in education, Sieber (1979) notes,

> The myth of a robust American innovativeness that is more than marginal differentiation for purposes of profit-making has fallen like a bludgeon on elementary-secondary education. Perhaps where it should fall, if any place, is on higher education, which seems to have implemented only a handful of original ideas in 50 years. Community colleges, open enrollment, sexual and racial integration, student participation in decision-making, Black studies, and research institutes almost exhaust the list, and most of these innovations were forced upon higher education by agitation for reform. Public lower education, in contrast, has

> implemented in varying degrees: desegregation, career information centers, teacher centers, courses in the social sciences and consumer education, many elements of the post-Sputnik science curricula, educational television, language labs, and a hailstorm of special products and practices. And if one is reluctant to believe the national surveys of innovation adoption (Havelock, 1973; Nelson and Sieber, 1976; Abramowitz and Tenenbaum, 1978; Rosenblum and Louis, 1978), all of which show substantial activity, then one may ponder the fact that in any given year about 50 percent of teachers make some "special effort" to find information about new methods and 40 per cent do so with regard to selecting instructional materials (Hood and Blackwell, vol. II, ch. III-17). (p. v)

While some enduring myths about innovation in public education -- that schools are uniquely sluggish and non-innovative; that innovations vanish as soon as federal dollars flee; that pursuing replication is like tilting at windmills -- continue to enjoy continuing currency, there is some evidence that John Lennon was right, "As long as we're alive, there's hope."

To me, the state of affairs is quite optimistic, as long as we recognize that we are operating at the margins of an enterprise that is relatively stable and likely to remain so, and that we would do well to be more candid in expressing our motivations and acknowledging our limitations in school improvement efforts. In spite of all the criticism and difficulties inducing and sustaining changes, it seems clear that there is widespread support for efforts to transfer exemplary practice from one site to another and to assist teachers in trying out instructional alternatives which are congruent with their values and capabilities -- especially if one starts from a premise that many teachers are quite competent and capable of change if a new practice makes sense to them and promises to improve things in their classroom.

During our Study's visits to 146 schools in the winter of 1978-79, we interviewed teachers, administrators, and others involved with the implementation of 61 different instructional innovations. One of our most surprising findings was the relative fidelity of the innovations being implemented -- a rather astounding .8 mean on a 0-1 scale, with 12% achieving 100% fidelity. In short, teachers can and are successfully replicating practices developed elsewhere. There are, of course, several caveats, some of which Susan Loucks has noted (1983). These not withstanding, my goal in this paper is to go to what I believe is the nub of the matter and the principal explanation of this finding, the reality of life in schools and classrooms, and the nature of the practices and the people who are currently most active in dissemination and school improvement efforts. These two phenomena -- emulation and replication -- are two of the unspoken covenants which characterize many schools. From my vantage point, they are encouraging signs, if we can interpret them accurately.

It is worth remembering that the consensus of research and experience amply confirms that the de facto activity of most practitioners is "keeping school," which includes a fair dose of "teaching kids," which with luck leads to a modicum of "children learning." This enterprise is conducted, often under "free-fire zone" conditions, by teachers increasingly drawn from the lower quartiles of undergraduate populations, ill-prepared for the gargantuan task they will face.

These are the same teachers who function on a daily basis in isolation from one another, in buildings whose principals "are especially eager to avoid situations of conflict and disruption; since their own career advancement depends essentially on recognition by others that they have maintained smooth, effective relationships with their immediate environments." (Miles, 1980, p. 82, summarizing Pauly, 1978).

In short, schools are not, as entities, information-seeking, knowledge-using, problem-solving, planful, collaborating organizations. The big "core" innovations of the seventies either have been co-opted or died aborning. Dwight Allen has retreated to relative obscurity (Dwight who?); Ivan Illich is but a murmur in our memories. In light of this reality, it seems sensible to press our advantage on the one front where progress has been ascertained, namely that of classroom change, which for most practitioners is where it's at. Building on numerous successes there seems eminently sensible -- to do more and better, all the while alert to the possibility of a larger breakthrough.

This brings us to the question, How do practitioners make sense of an innovation? What are the dynamics that lead them to the point where they can be called adopters, who are employing a sufficiently faithful variation of a new practice that its originator would acknowledge it as a legitimate offspring?

The Realities of Innovations and Their Implementation in Today's Schools

Let us acknowledge at the outset that we are talking about a rather special subset of teachers as we pursue the discussion of making improvements in the classroom. They are the adopters, the users, the innovators, the exemplars of the literature; the ones who show up as recognizable and traceable blips on the radar screens of diffusion researchers. (My hunch is that they are not such rare creatures as generally thought.)

Further, let us acknowledge that the innovations in question are typically those associated with federally funded projects expressly attempting to improve the state of practice through some kind of benign intrusion (dissemination) into other schools. The best known programs are those of the National Diffusion Network; adoption-adaptation programs administered by state education

agencies under ESEA TItle IVC; the Outreach projects of the Handicapped Children's Early Education Program sponsored by the Office of Special Education; and ESEA Title I special regional efforts to promote quality in local compensatory education programs. Hence, we are not concentrating on commerical materials (except as they are included in one of the afore-mentioned projects) distributed by publishers, even though they constitute the bulk of our schools' formal curricula. (While we know such materials are distributed to classrooms or schools, data on patterns of actual usage is virtually non-existent.) Nor are we talking about the invisible individual effects of teachers to improve.

The number of such projects across the country has increased dramatically since the mid-'70s. The ivory towers of the university, the time-honored sources of new knowledge, were supplemented with research and development laboratories in the late 1960s, whose task it was to convert such knowledge into forms usable by local educators. The impact of these efforts remains a matter of some debate, but continuing widespead use of the original products is not often touted as an accomplishment.

Similarly, the large-scale curriculum development projects failed to affect large numbers of students, though some highly beneficial vestiges no doubt remain. The New Math, for example, experienced a swift fall from grace.

One particulary fecund source of new practices was the garden of ESEA Title III and its successor, Title IV-C. The "let many flowers bloom" approach followed by its federal administrators in the late '60s produced some hardy strains. Then, in the early '70s, it was as if a tiring Johnny Appleseed, after traversing the country strewing his seed and seeing many different creations flourishing in isolated parts of the country, sent out the word that he needed help to spread the wealth. The response to that invitation (which launched the NDN, initially called the USOE Diffusion-Adoption Network), coupled with parallel developments elsewhere, led almost overnight to a large-scale community of local practitioners who suddenly had new channels of communication open to them. The beneficiaries of the new networks thus developed were teachers and administrators in schools across the country who became intrigued by the opportunity to try out a practice developed by someone just like them.

A prime vehicle for practitioners to share information is the professional conference. A varient on this tradition is the so-called awareness conference, organized to give teachers and administrators exposure to a range of instructional alternatives and interest them in pursuing the necessary "training" to try it out in their own classrooms. The players in these dramas include the organizer, who is usually based in the locale in question and supported by the same sponsor as the presenters, who are the main attractions of the event, and most importantly, the participants, who hope to pick up a few tips or perhaps learn about a whole new approach (or yes, perhaps just get away from kids for a day).

Typical participants at such conferences are veteran teachers with more than eight years of experience. While their motivations for attendance may be quite varied, they probably have three things in common:

- Their role models are other teachers. Indeed, teachers in their own public schools remain the behavioral models of any consequence, brief and generally inconsequential student teaching episodes notwithstanding.

- Their school principals had to OK attendance at the conference. The stability and regularities of public schools are an acknowledged, if not entirely happy, state of affairs. And, the rhetoric of participation aside, principals (or their designees) certainly control a large part of the teachers' professional development. They get the announcements about outside events and decide how to pass the information along, and to whom. Principals approve requests for release time or plans for negotiated inservice sessions. They have functional responsibility for defining the school's "needs", and can accelerate or stall any initiatives involving more than a single classroom. And, our Dissemination Study field researchers report, principals are the ones who, by their legitimization and support of particular improvement efforts, are the necessary leaders in creating and sustaining the all-important "sense of ownership."

- The teacher participants have figured out how to survive in a very grueling job. If not demonstrably exemplars, they are no doubt perceived as being effective in their classrooms. And they have a decent idea of what makes them effective. They know how to use information to make their jobs easier and to get the results they want, and they know where their soft spots lie. They have learned from others before (emulated them), and they have developed agreements (probably implicit) with their principal about their zones of discretion in instructional matters.

Thus, these folks are not likely to be innovation junkies looking for a quick fix; they're serious shoppers and seasoned skeptics. But if conditions are right, the ingredients for a cycle of emulation and replication are present.

Remember that most of what is traveling under the label "innovation" today is a non-radical variation of mainstream practice. Public schools are both the producers and the consumers, with few exceptions. All schools are subject to the same federal laws (for example, Title I and P.L. 94-142) and to the ripple effects from the current back to basics and minimum

competency movements. Slack resources are fantasies of the past. Negotiated contracts set forth working conditions in most districts. Kids everywhere are despairingly similar -- that is to say, incredibly different in their attitudes and capabilities, and when clustered in groups of 30, they share age and little else. Schools are in a non-market sector (Nelson and Winter, 1977) in which few incentives (i.e., profit maximization) operate to stimulate innovation as classically defined. There really is very little that's new under the sun. For schools, innovation is largely a process of imitation or emulation under conditions of non-competition in a profession where status rewards accrue for revealing "trade secrets" to others.

Under these circumstances, teachers come to a presentation (usually in fairly large numbers not unlike their own classes) and experience a mirror-image of their own daily reality, only now the person at the front of the room is someone else. But unlike most settings where teachers are cast as learners, the "expert" is not a university professor or other outside consultant. Instead, it's another teacher who, by dint of skill and perserverance, has had his or her classroom practice judged as exemplary and effective. If it carries validation from an official federal panel, why this is someone to pay attention to -- an exemplar for sure! If the presenter is reasonably articulate and demonstrates a grasp of classroom reality, a big hurdle is passed.

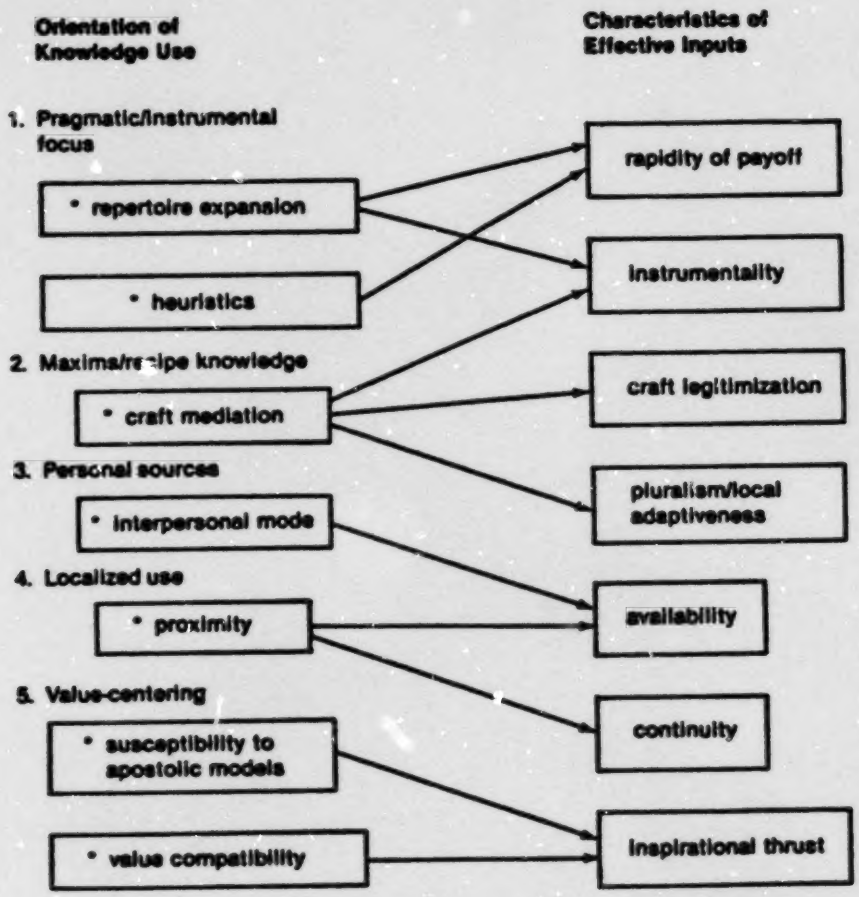
For some participants, what they hear about will sound exactly like what they do. For them, their reward is limited to knowing they're right up to snuff -- as good as the best. This is not a trivial result, but after the session they won't appear on our radar screen as adopters. For some others, while most aspects of the new practice will be familiar, one part will be new or sound sensible. It might be a new format for record-keeping, or communicating with parents, or a judgement that a particular diagnostic test is no good. These folks will leave the session, and without further ado, add or subtract a feature to what they do. These folks don't show up on our radar screen either, though change has occured.

The last group is those who have not rejected the new practice as impractical or philosophically abhorrent. The innovation will have attributes (in the eyes of the teachers) which are simultaneously enough like, and enough unlike, what they're doing that substantial new knowledge, materials, or skills will be needed to implement it. The presenter has laid out what the next steps are and is perceived as a credible role model -- in short, someone worthy of emulation.

This combination of the presenter's charisma and credibility, when combined with a competent set of materials and access to necessary training and assistance, is almost irresistible. Notice how well it maps onto the critical factors identified by Huberman (1981) in his masterful treatment of the realities of knowledge use by teachers, as reflected in Figure 1.

Figure 1

*Knowledge Use Orientation and Characteristics of Inputs Likely to Be Effective.**



*Bear in mind that this chart is a truncated version of a more elaborated schema in Huberman, 1981.

Processing information to initially assess the fit and feasibility of a new practice for their classrooms is a natural and rapid process for most veteran teachers. Having the information presented in language compatible with their own is tremendously facilitating to "reasoned consideration," if not the full-dress "rational problem-solving" lusted after by many program designers. As individuals who ply a predominantly interpersonal craft, most teachers are influenced mightily by their perception of the people behind the message.

Iterations of this same process occur during any subsequent contacts with a new practice's developer, its materials, or its local representative. Each medium, along with changes in the person's environment, will introduce a new element into the equation, but 'twas ever thus. Experience in a subsequent training event may result in three +s of the new practice being neutralized in light of more complete description or a demonstration. A requirement for joint planning with other teachers, specialists, or parents may add complications which overwhelm an otherwise actionable fit, since schools, like nations, do not have institutional structures and habits of cooperation to facilitate such new relationships. But, if our observations over more than a decade are any guide, easy access to face-to-face assistance and timely support from administrators can get most teachers over such obstacles and keep improvement efforts on track.

Teachers change -- given the opportunity to try out new practices which are perceived as attractive and constituting an improvement, introduced by individuals judged worthy of emulation, and supported by formally designated leaders who are respected. And implementing a practice under such conditions, when it consists of variation in a generally familiar instructional repertoire, is not such a big deal. While it may come as a surprise, replication is a natural act for most teachers.

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